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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,316	07/25/2003	Timothy Neill	200208568-1	1916

22879 7590 01/30/2008
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INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

TRAN, CHUC

ART UNIT	PAPER NUMBER
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2821

NOTIFICATION DATE	DELIVERY MODE
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01/30/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/627,316	Applicant(s) NEILL ET AL.	
	Examiner Chuc D. Tran	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19,27-29,31 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19,27-29,31 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “electrical device” in claims 1, 5-6, 27, the “radio module is coupled to an enclosure and the electromagnetic shield extends from the printed circuit board to the enclosure” in claim 12, the “antenna is disposed within the enclosure” in claim 16, the “conducting coating” in claim 10, and the “conductive coated plastic foam” in claim 31 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “26” in Fig. 3-6 has been used to designate both shield and radio transceiver. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: the character “26” in paragraph [0019] and [0023] have been used to designate both “radio transceiver” and “radio transceiver shield”. Appropriate correction is required.

Claim Objections

4. Claims 2, 14 are objected to because of the following informalities:

It is not clear how the device “radio transceiver operates as an electromagnetic shield” in claims 2, 14 works without redefined in specification. It appears from the illustration that the shield (26) disposed around the radio transceiver device to operate as the electromagnetic shield for the antenna (30). This description deems to conform with the depiction show in Fig. 3-6. Applicant is encouraged to implement this type of language in the interest of improving its clarity. Appropriate correction is required.

Allowable Subject Matter

5. The indicated allowability of claims 4, 6, 10-11, 14-19, 27-29 and 31-32 are *withdrawn* in view of the newly discovered reference(s) to 6,236,366 and 6,417,817. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

7. Claims 1-11 27-29 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al (USP. 6,236,366).

Regarding claim 1, Yamamoto disclose a radio module (100) for an electrical device (200) in Fig. 8, comprising: a radio transceiver (Col. 2, Line 6); an antenna (4) electrically coupled to the radio transceiver ((IC, 6 and 7) same (IC, 23)) (Col. 7, Line 55) (Fig. 2B); and an electromagnetic shield (13) disposed around the antenna (4) (Fig. 7) to isolate the antenna from loading effects of components of the electrical device (200) (Fig. 8) that are external to the radio module (100) (Col. 10, Line 20-32) , wherein the radio transceiver (6) is external located outside the electromagnetic shield (13) (Col. 10, Line 22) that is disposed around the antenna (4) (Fig. 7).

Regarding claim 2, Yamamoto disclose that the shield (13) operates as an electromagnetic shield for one side of the antenna (4) (Col. 10, Line 21).

Regarding claim 3, Yamamoto disclose in Fig. 3 that the antenna (4) is disposed on a conventional printed circuit board (44) (Col. 8, Line 9).

Regarding claim 4, Yamamoto disclose in Fig. 7 that the shield (13) comprises a metal plate (12) coupled to the PCB (44) (Fig. 6 and 7).

Regarding claim 5, Yamamoto disclose in Fig. 7 that the shield (13) is disposed relative to the transceiver (6) to isolate the electromagnetic wave (Col. 10, Line 22)

Regarding claims 6 and 7, Yamamoto disclose in Fig. 3 that a cover, housing (41) (ground) disposed over, around the antenna (4) and adapted to extend through an opening in the side of the electrical device (Fig. 3 and 5), the cover (antenna metal ground) is generally transparent radio signal (Col. 8, Line 1).

Regarding claim 8, Yamamoto disclose that the housing (3) is disclosed around the transceiver (6) (Fig. 5).

Regarding claim 9, Yamamoto disclose in Fig. 7 that the housing (3) comprises a conductive metal (Col. 9, Line 64).

Regarding claim 10, Yamamoto disclose that the housing (3) comprises a polymeric (non-conductive) material having a conductive coating (Col. 9, Line 62).

Regarding claim 11, Yamamoto disclose that the housing (3) comprises a periodic-band-gap (dielectric or non-conductive) material (Col. 9, Line 62).

Regarding claim 27, Yamamoto disclose a method of manufacturing a radio module for use within an electrical device in Fig. 1-8, comprising: tuning (converting frequency) an antenna to produce a maximum output at a defined load (Col. 11 Line 16-19); and disposing a shield (13) around the antenna (4) (Fig. 7) to establish the defined load on the antenna (Col. 11, Line 16-19) and to isolate the antenna from electrical noise generated by electrical components within the electrical device but external to the radio module (Col. 10, Line 22).

Regarding claim 28, Yamamoto disclose in Fig. 7 that an antenna housing (3) around a perimeter of antenna (4) (Fig. 7B).

Regarding claim 29, Yamamoto disclose in Fig. 3 that disposing the antenna (4) on a primed circuit board (44) (inherently substrate) and disposing a conductive plate (41) (ground) (Col. 8, Line 1) on the printed circuit board opposite the antenna (Fig. 3).

Regarding claim 32, Yamamoto disclose that fabricating the shield with open side (10) to enable radio signals to be transmitted to and received by the antenna (Col. 8, line 30) (Fig. 2).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Pett et al (USP. 5,210,542).

Regarding claim 31, Yamamoto disclose a method of manufacturing a radio module for use within an electrical device as set forth in the claims except fabricating the shield with a conductive-coated plastic foam. Pett disclose in Fig. 3-5 a method of fabricating the shield with a conductive-coated plastic foam (32 and 34) (Pett, Col. 5, Line 31). Thus, it would have been obvious to one of ordinary skill in the art to recognize Yamamoto antenna system by fabricating the shield with a conventional conductive-coated plastic foam as taught by Pett. Using the technique of fabricating the conventional conductive-coated plastic foam around the antenna for

isolating the external electromagnetic wave of Pett would have been obvious to one of ordinary skill.

10. Claims 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pirila et al (USP. 6,417,817) in view of Yamamoto.

Regarding claim 12, Pirila disclose a radio module in an electronic device comprising: a printed circuit board (101) (Fig. 1); an antenna (111) disposed on the printed circuit board (Fig. 2); and electromagnetic shield (107) extending from the printed circuit board around the antenna to isolate the antenna from loading effects of component of the electronic device that are external (external signal) to the radio module (Col. 1, Line 15). However, Pirila is silent on the limitation of an enclosure. Yamamoto disclose in Fig. 5 the enclosure (1) (base or platform) (Pirila, Fig. 5). Thus, it would have been obvious to one of ordinary skill in the art to recognize Pirila radio module by providing the enclosure (platform) as taught by Yamamoto. Using the enclosure (base or platform) for supporting the radio module to be mounted of Yamamoto would have been obvious to one of ordinary skill.

Regarding claim 13, Pirila disclose that a radio transceiver (104) disposed on the printed circuit board and electrically coupled to the antenna (Col. 1, Line 46) (Fig. 1 and 2).

Regarding claim 14, Pirila disclose that a radio transceiver shield (105, 106) that operates as an electromagnetic shield for the antenna (Col. 1, Line 34)

Regarding claim 15, Pirila disclose that a portion generally transparent (space) to radio signals produced by the radio module, the portion being disposed in facing relationship with the antenna (Fig. 2).

Regarding claim 16, Pirila disclose that the antenna is disposed within the enclosure (Fig. 2).

Regarding claim 18, Pirila disclose that the shield (107) comprises a metal (ground) plate (108) disposed on the printed circuit board (Pirila, Fig. 1).

Regarding claim 17, Pirila disclose the radio module as set forth in the claims except a cover disposed over the antenna. Yamamoto disclose in Fig. 5 that a cover (2) disposed over the antenna (4), the cover being generally transparent (space) to radio signals at the operating frequency of the radio module (Yamamoto, Col. 7, Line 17). Thus, it would have been obvious to one of ordinary skill in the art at to recognize Pirila radio module by providing the transparent cove (space window) over the antenna for signal to be used as taught by Yamamoto. Providing the transparent cove (space window) over the antenna for transmitting and operating the radio frequency signal of Yamamoto would have been obvious to one of ordinary skill.

Regarding claim 19, Pirila disclose the radio module as set forth in the claims except the metal plate (ground) is disposed on the side of the printed circuit board opposite the antenna. Yamamoto disclose in Fig. 3 the metal plate (ground) (41) (is disposed on the side of the printed circuit board (44) opposite the antenna (5). Thus, it would have been obvious to one of ordinary skill in the art at to recognize Pirila radio module by switching the metal plate (ground) on the printed circuit board opposite the antenna as taught by Yamamoto for signal to be used from the antenna See (Yamamoto, Col. 8, line 1). Using the technique by switching the conventional metal plate (ground) on the printed circuit board to the other side on the printed circuit board in the radio module of Yamamoto would have been obvious to one of ordinary skill.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuc D. Tran whose telephone number is (571) 272-1829. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC
January 22, 2008

Douglas W. Owens 1/22/08

DOUGLAS W. OWENS
SUPERVISORY PATENT EXAMINER